

Moon (New on October 8) rises, 1h. 10m.; souths, 8h. 31m.; sets, 15h. 41m.; decl. on meridian, 12° 2' N.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian ° ' N.
Mercury ...	5 10 ...	11 18 ...	17 26 ...	0 43 N.
Venus ...	9 55 ...	14 17 ...	18 39 ...	19 4 S.
Mars ...	0 15 ...	8 0 ...	15 45 ...	18 47 N.
Jupiter ...	4 13 ...	10 38 ...	17 3 ...	4 12 N.
Saturn ...	21 35* ...	5 43 ...	13 51 ...	22 18 N.

* Indicates that the rising is that of the preceding day.

Oct.	h.	
6 ...	17 ...	Jupiter in conjunction with and 1° 25' north of the Moon.
7 ...	20 ...	Mercury in conjunction with and 0° 29' north of the Moon.

HEREDITY

AT the February meeting of the Swedish Anthropological Society Prof. Wittrock read a paper on the hereditability of colour of the eyes. The speaker had been requested by Prof. Alphonse De Candolle, of Geneva, to make observations on this point, which, together with those made in Switzerland, North Germany, and Belgium, had formed the material for M. De Candolle's paper, "*Hérédité de la couleur des yeux dans l'espèce humaine*" (*Archives des Sciences Physiques et Naturelles*, 3^e période, t. xii., Genève, 1884). From the same the remarkable fact was derived that brown eyes were more common in men than women; of the individuals examined 41·6 per cent. of men and 44·2 per cent. of women had brown eyes. Further, in families where the parents had the same colour of eyes 80 per cent. of the children of parents with brown eyes had brown eyes, whilst of children of parents with blue eyes 93·6 per cent. of them had eyes of that colour. The unconformity was no doubt due to atavisme or the hereditary influence of ancestors. Of the children of parents of whom the father had brown and the mother blue eyes 53·3 per cent. had brown, whilst where the reverse was the case 55·9 per cent. had blue eyes. As the percentage of brown-eyed children of parents with bi-coloured eyes was highest, it seemed as if brown eyes were always on the increase to the detriment of blue ones. It appeared also from these researches that women with brown eyes have better prospects of marrying than those with blue. 52 per cent. of the married women had brown eyes, and only 48 per cent. of them blue—a circumstance which is the more remarkable as the number of women with brown eyes in Italian Switzerland is only 44 per cent. Another remarkable discovery was that the average number of children of parents with eyes similar in colour was 2·7, whilst that of those with different colour was 3·18, which was an additional proof of the fact that children of parents with similar organisation were as a rule of weak constitution. Comparing the colour of the eyes of the children where the parents were bi-coloured, with those of each of the latter, it was discovered that the eyes of the father were inherited by 48·8 per cent. of the children, and those of the mother by 51·2 per cent., which, divided between sons and daughters, showed that 47 per cent. of the former and 49·5 per cent. of the latter inherited the eyes of the father, whereas 53 per cent. of the sons and 50·5 per cent. of the daughters inherited those of the mother. Since Prof. Candolle had published his paper, he (the speaker) had continued his researches in Sweden, and from the material he had collected he had discovered results differing from Prof. Candolle's. Of the individuals reported to him 29·6 per cent. of the men and 30·7 per cent. of the women had brown eyes, so that even in that country the latter were more numerous than the former, but this was no doubt due to the circumstance that he had been most anxious to obtain particulars from bi-coloured parents. In accordance with Candolle's results, 75·6 per cent. of children of parents both with brown eyes inherited this colour, whilst of those with blue eyes 97 per cent. inherited that colour. It was but natural that this should be the case in Sweden, where blue eyes predominated. As regards the bi-coloured parents the case was different in Sweden too. If the father had brown and the mother blue, 59·9 per cent. of the children had brown eyes, whilst where the reverse was the case 53 per cent. of them had brown ones. These figures were the reverse of Candolle's. But of *all* bi-coloured parents 56 per cent. of the children had brown eyes, *i.e.* that in Sweden too the latter are on the increase. He could not say what rôle the colour of the eyes played in the

selection of a wife in Sweden, as he had no statistics of the distribution of brown eyes in general, but there was a tendency similar to that stated above, as, of the parents embraced by these researches, the majority of wives had brown eyes. With reference to the number of children in Sweden of con-coloured and bi-coloured parents, that of the former was 4·49 and that of the latter 4·03, whilst 52·6 per cent. of the children inherited the eyes of the father and 47·4 per cent. those of the mother; of the sons 51·8 per cent. inherited the eyes of the father, and 48·2 per cent. those of the mother, which figures as regards the daughters were respectively 53·5 and 46·5 per cent. This shows that in Sweden the eyes are not predominantly inherited from the mother alone, and that the offspring of equally-constituted parents should not be weaker. The speaker stated in conclusion that he is continuing his researches. He excludes children under ten years of age from the same, and classifies blue-grey or grey eyes as blue.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

PROF. W. GRYLLS ADAMS, F.R.S., will deliver a Course of Lectures at King's College, London, on Heat and Light, during the Academical Year 1885-6. A Course of Practical Work in Electrical Testing and Measurement, with especial reference to Electrical Engineering, will be carried on under his direction in the Wheatstone Laboratory. There will also be a Course of Lectures on Mechanics and the Principles of Energy. The Wheatstone Laboratory is open daily from 1 to 4, except on Saturdays. For further particulars apply to Prof. Adams, King's College, London.

THE following appointments have recently been made at the Victoria University, Owens College, Manchester:—To the Professorship of Mathematics: Mr. Horace Lamb, M.A., F.R.S., late Fellow of Trinity College, Cambridge, and Professor of Mathematics in the University of Adelaide. To the Professorship of Anatomy: Mr. Alfred H. Young, M.B., F.R.C.S.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, September 21.—M. Bouley, President, in the chair.—On the development of cholera in India, by M. Gustave Le Bon. In support of Prof. Peter's view that European differs from Asiatic cholera only in the greater intensity of the causes producing it, the author argues that both forms might break out spontaneously in any country through the volatile germs arising from putrid organic matter. In his former researches he showed that, apart from these germs, there exists a series of volatile alkaloids which, when introduced by respiration, produce almost fulminating effects. These researches throw much light on the accidents attending the exhumation of bodies long buried and on the spread of typhoid or analogous fevers. The facts recently observed by M. Le Bon during a sudden outbreak of cholera at Kombakonum, in the south of India, tend to confirm this hypothesis. In India itself cholera rages almost exclusively amongst the native populations; the English, who reside in large cantonments, where sanitary arrangements are scrupulously attended to, being seldom attacked. That cholera and intermittent fevers are propagated chiefly by bad water is a point on which opinion is unanimous in that country, and the author's personal experience places it beyond all reasonable doubt.—Elements of Brooks's comet, by M. R. Radau. These elements, according to observations made at Cambridge and Paris, are found to be:—

$T = 1885, \text{ August } 10^{\text{h}} 30^{\text{m}} 45^{\text{s}} 7$; mean Paris time.

$$\left. \begin{array}{l} \pi - \Omega = 43 \quad 0 \quad 47 \\ \Omega = 204 \quad 33 \quad 7 \\ i = 59 \quad 22 \quad 30 \end{array} \right\} \text{Mean equinox of } 1885^{\circ} 0.$$

$$\log q = 9^{\circ} 8' 7694$$

—Note on a new stellar spectroscope, by M. Ch. V. Zenger. This instrument is constructed on a new principle, and chiefly intended to measure simultaneously and accurately the angle of position and the distance of double stars situated very close together.—On the process of fertilisation in the Cephalopods,

by M. L. Vialleton.—On the anatomical organisation of the urns in *Cephalotus follicularis*, by MM. Jules Chareyre and Edouard Heckel.

BERLIN

Physiological Society, July 31.—Prof. Fritsch spoke on the functions of the sebaceous glands, raising a protest against the conception, represented quite recently by Herr Unna, that these glands served only to lubricate the hairs, while the globiform glands, commonly called the sudoriparous glands, lubricated the skin and induced the formation of the subcutaneous fat, and that, finally, the perspiration was discharged by the sweat-pores, or, rather, the extreme ends of the straight canals into which the sweat found its way out from intercellular spaces through the stomata. A whole series of anatomical, histological, and physiological grounds were brought forward against this view both by the speaker and, in the course of the discussion on the subject, by Prof. Du Bois-Reymond, Prof. Waldeyer, Dr. Gad, and Dr. Lassar. All known observations and experiments were, on the contrary, they maintained, in favour of the view that the sebaceous glands provided fat for the skin, while the globiform glands had the production of sweat assigned to them.—Dr. Weyl reported on the results of a chemical examination of the cholesterol, the composition of which had not hitherto been ascertained, although this substance had been discovered more than a hundred years ago, and had since been traced in the most varied organs of the animal body and even in plants. The most searching investigation down to the present of cholesterol had been made by Herr Zwenger, who, by treatment with sulphuric acid and nitric acid, had found combinations which he had distinguished and chemically characterised as cholesterylene and cholesterone. By repeating these experiments Dr. Weyl had achieved much purer derivatives of the cholesterol, in particular chloric and bromic combinations, in very pure crystals, which rendered exact elementary analysis possible. This led to the result that the derivatives of cholesterol were found to be hydrocarbons belonging to the great class of the terpenes—that is, they were products of condensation or polymerisations of the simple terpene (C_5H_8). Even though it were not yet possible to state precisely the number of the C_5H_8 which had become polymerised in the several cholesterol derivatives, the speaker yet thought he had sufficient ground for assuming that the composition $(C_5H_8)_5H_2O$ was the one proper to the cholesterol itself. Substances which, both by their reactions and their percentage compositions, were denotable as terpenes, might also be obtained from the choleic acid, a circumstance which pointed to the more intimate relation between cholesterol and choleic acid.—Dr. Biondi communicated the results of an investigation carried out by him in the Institute of Prof. Waldeyer with a view to throwing light on the origin of the spermatozooids in the seminiferous canals—a question on which the views of physiologists were so widely divergent. By appropriate use of appliances for hardening, fixing, and colouring, among which the advantages of Flemming's fluid had to be mentioned with quite special prominence, Dr. Biondi arrived at results which corroborated none of the views formerly put forth, but which explained the earlier observed facts. In accordance with these results it had been endeavoured diagrammatically to distribute the contents of the seminiferous canals into columns, which, proceeding from the wall towards the central cavity, might be grouped into three layers. In the first stage of development, a stage always met with, in particular, in animals not yet ripe, the extreme layer lying on the wall of the canal consisted of round, primitive cells, the second layer, proceeding inwards, of round mother-cells, which were very rich in caryokinetic figures, and the third innermost layer consisted of a larger number of small round daughter cells. In a second stage of development observable in ripe glands the nucleus of the daughter cells were seen converted into spermatozooids, the exterior half of the nucleus becoming the head and the other interior half the middle part and tail of the spermatozoon. The protoplasm of the daughter cells took no part in this transformation, and enveloped the bodies of the spermatozoa, making them cohere into bundles from which the tails of the spermatozoa projected towards the central canal. These masses of protoplasm enveloping the bodies of the spermatozoa altogether resembled the figures described by the earlier observers as "Spermatoblasten." In this stage the above diagrammatically assumed column consisted, from the outside inwards, of the primitive cell, the mother

cell, and the bundle of spermatozoa. In the next stage of development the formation of the spermatozoa, arising always in the same manner from the nucleus of the daughter cells, was pushed farther outwards, so that the column now consisted of but one large round cell on the outside and bundles of spermatozoa on the inside. The formation of the seminal corpuscles advanced still further, and at last the whole column, as far as the wall of the canal, consisted of spermatozoa, the bodies of which were agglutinated into bundles by masses of protoplasm, their tails being directed inwards. Primitive cells out of neighbouring columns now intercalated themselves between the wall of the canal and the spermatozoa, pushing the latter towards the middle. By the development of the mother and daughter cells the spermatozoa were quite pressed and discharged into the central canal. The process thus described then began anew. It must, however, be observed that in nature there was no separation into columns and layers such as was here diagrammatically described. It was only for the sake of clear representation that the processes succeeding each other in time were thus exhibited as divided in space. Dr. Biondi had examined this structure of the seminiferous canals, and this development of the spermatozooids in the bull, the swine, the cat, the rabbit, the guinea-pig, the rat, and other mammalia; and in all these cases he had found alike the same results. Prof. Waldeyer testified that Dr. Biondi had attained to these results quite independently and had communicated and demonstrated them to him as early as February of this year. It was only on his advice that Dr. Biondi had further examined a longer series of animals before publishing his results. A few days ago, continued Prof. Waldeyer, he had received a letter from Prof. Grünhagen in Königsberg, in accordance with which he (Prof. Grünhagen) had attained to the same results on spermatogenesis as had Dr. Biondi, to whom, of the two independent discoverers, was due the title of priority.—Dr. Blaschko briefly explained a series of microscopic preparations he exhibited, which served to show that between the epidermis and the cutis there lay no cementing substance; but just as it was long known that in the case of the epidermis cells they had processes grooving themselves digitately into one another, so here, too, the processes of the epidermis and cutis cells were seen to intertwine with one another and form a network, the meshes of which were particularly large in an oedematous skin.—Dr. Lassar demonstrated microscopic preparations of skin which he had excised from a patient suffering under lichen ruber. In the copious protoplasm (the exudation of the inflammation) surrounding the canals of the epidermis there were seen, after colouring with fuchsin and Bismarck-brown, an uncommonly large number of micrococci, distinguishing themselves particularly by their remarkable smallness.

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